

DRAFT

New York State Department of Transportation  
Yellow Flag NB2358W021

By: Alex Abreu

Flag Date: June 15, 2023

Superseding Information:

No Flags Superseded

Structure Information

BIN: 1065318

Feature Carried: 278I278IX2M23027

Feature Crossed: 6TH AVENUE

Orientation: 8 - NORTHWEST

Region: 11 - NEW YORK CITY

County: KINGS

Political Unit: City of NEW YORK

Approximate Year Built: 1962

Posted Load Matches Inventory : Yes

Bridge Load Posting (Tons) : Not Posted for Load

Primary Owner: New York State Department of Transportation

Primary Maintenance Responsibility: 12 - State - Subcontracted to another Party

Typical or Main Span Type: 3 - Steel, 02 - Stringer/Multi-Beam or Girder

This Bridge is not a Ramp

Number of Spans: 322

Verbal Notification Information

Person Notified: Not Contacted

Date:

Of:

Signature Information

Signature: Alex Abreu, P.E. 099761-1

Date: June 20, 2023

Reviewed By:

Date:

Attachments: 7

**Flagged Elements**

Parent Element	Element	Total Quantity	Unit
<b>Span Number : 6</b>			
	107 - Steel Open Girder/Beam	821	ft

**Flagged Condition Description**

This Yellow Flag No. NB2358W021 is NEW.

Location: Span 6, Girder G2 at Pier 5.

**Description:**

The end of Girder G2 in Span 6 at Pier 5 exhibits severe section loss for 1"-9" wide for the full height of the girder web along the connection angle with 0.20"-0.50" remaining thickness measured (RTM) resulting in approximately 25% to 70% section loss with average 48% section loss. The lower girder web above the bottom flange exhibits severe section loss for 2'-6" long for 2"-5" high with 0.20"-0.37" RTM resulting in approximately 45%-70% section loss with average 58% section loss. (Photos #4 and #5) The girder web exhibits three corrosion holes over 1'-1/2" x 1/2" area approximately 4" from the connection angle and 3" from the bottom flange (Photo #6). The overall shear web area section loss is approximately 51%. Also, the bottom flange exhibits up to 50% section loss for 1'-8" long for the full width of the flange (Photo #7). (refer to Flag Condition Sketch Photo #2 for more details)  
This is a newly flagged condition.

**Notes:**

1. Adjacent Girder G1 exhibits up to 20% section loss in the lower web above the bottom flange for 24" long x 9" high.
2. Adjacent Girder G3 exhibits section loss for 1"-4" wide for the full height of the web along the connection angle with 0.26"-0.52" RTM resulting in approximately 22%-61% section loss with average 37% section loss. Also, the lower girder web above the bottom flange exhibits section loss for 2'-0" long x 2'-11" high with 0.26"-0.45" RTM resulting in approximately 33%-61% section loss with average 47% section loss. This location does not warrant a yellow flag since the overall shear web area section loss is approximately 35%.
3. A 35ft bucket truck parked in the curbed median area was required to access this location.
4. The previous 2022 SILO CS3 mini report stated the following defects at the above flagged girder:  
The left side web of Girder G2 exhibits a 1" to 9"W x Full Height area with 1/8" to 3/16"D section loss along the connection angle. The lower web exhibits a 2" to 5"H x 2'-5"L area with 1/8" to 3/16"D section loss with a 1'-1/2" x 1/2" area with three (3) corrosion holes. The right side web of Girder G2 exhibits a 2" to 1'-3"H x 2'-3"L area with 3/16"D section loss at the lower web and along the connection angle. The upper web along the connection angle exhibits 1/8" to 3/16"D section loss at 2" to 6"W x 1'-3"H area. The bottom flange exhibits up to 50% section loss at the bottom for 1'-8"L x Full Width.

## Flag Photographs

Photo Number: **1**

Photo Filename: **23\_Flag Location Plan.jpg**

Gowanus Expressway  
2023 Biennial Inspection - Field Sketch

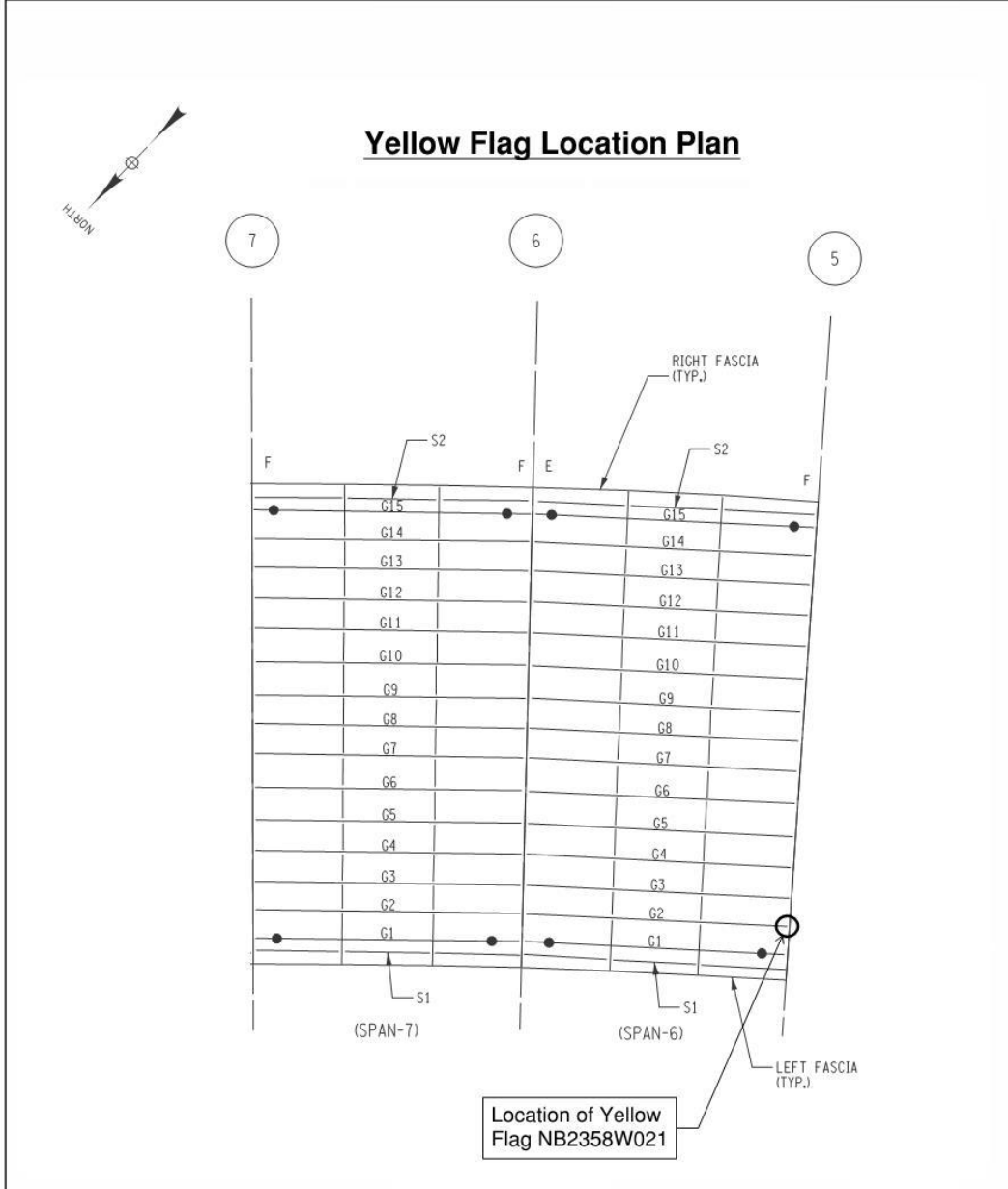
BIN: 1065318

Team: AA/TS

Date: 06/15/2023

Span: 6

Location: Girder G2 at Pier 5



wsp

Attachment Description: Flag Location Plan

Photo Number: 2

Photo Filename: 23\_Span 6\_Pier 5\_Girder G2\_Connection Detail.jpg

Gowanus Expressway  
2023 Biennial Inspection - Field Sketch

BIN: 1065318

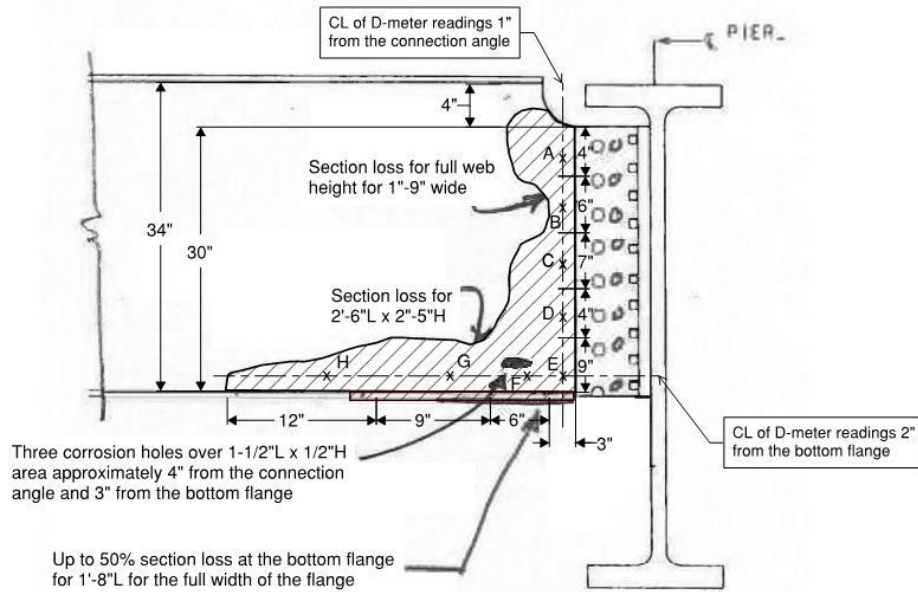
Team: AA/TS

Date: 06/15/2023

Span: 6

Location: Girder G2 at Pier 5

### Left Face of Girder G2



Point	D-Meter Readings (in)	Calculated Section Loss (%)
A	0.50	25%
B	0.41	39%
C	0.37	45%
D	0.27	60%
E	0.20	70%
F	0.25	63%
G	0.32	52%
H	0.37	45%

#### Section Loss Calculations:

Shear web area:

$$4" \times 0.50" [\text{Point A}] + 6" \times 0.41" [\text{Point B}] + 7" \times 0.37" [\text{Point C}] + 4" \times 0.27" [\text{Point D}] + 9" \times 0.20" [\text{Point E}] = 9.93 \text{ in}^2$$

Overall shear web area section loss:

$$[(30" \times 0.667") - 9.93 \text{ in}^2] / (30" \times 0.667") \times 100 = 51\%$$

Average section loss for the full web height along the connection angle:

$$(25\% [\text{Point A}] + 39\% [\text{Point B}] + 45\% [\text{Point C}] + 60\% [\text{Point D}] + 70\% [\text{Point E}]) / 5 = 48\%$$

Average section loss for the lower web above the bottom flange over 2'-6" long area:

$$(70\% [\text{Point E}] + 63\% [\text{Point F}] + 52\% [\text{Point G}] + 45\% [\text{Point H}]) / 4 = 58\%$$

#### Notes:

-As-measured web thickness is approximately 0.667".

wsp

Attachment Description: Flag Condition Sketch

# DRAFT

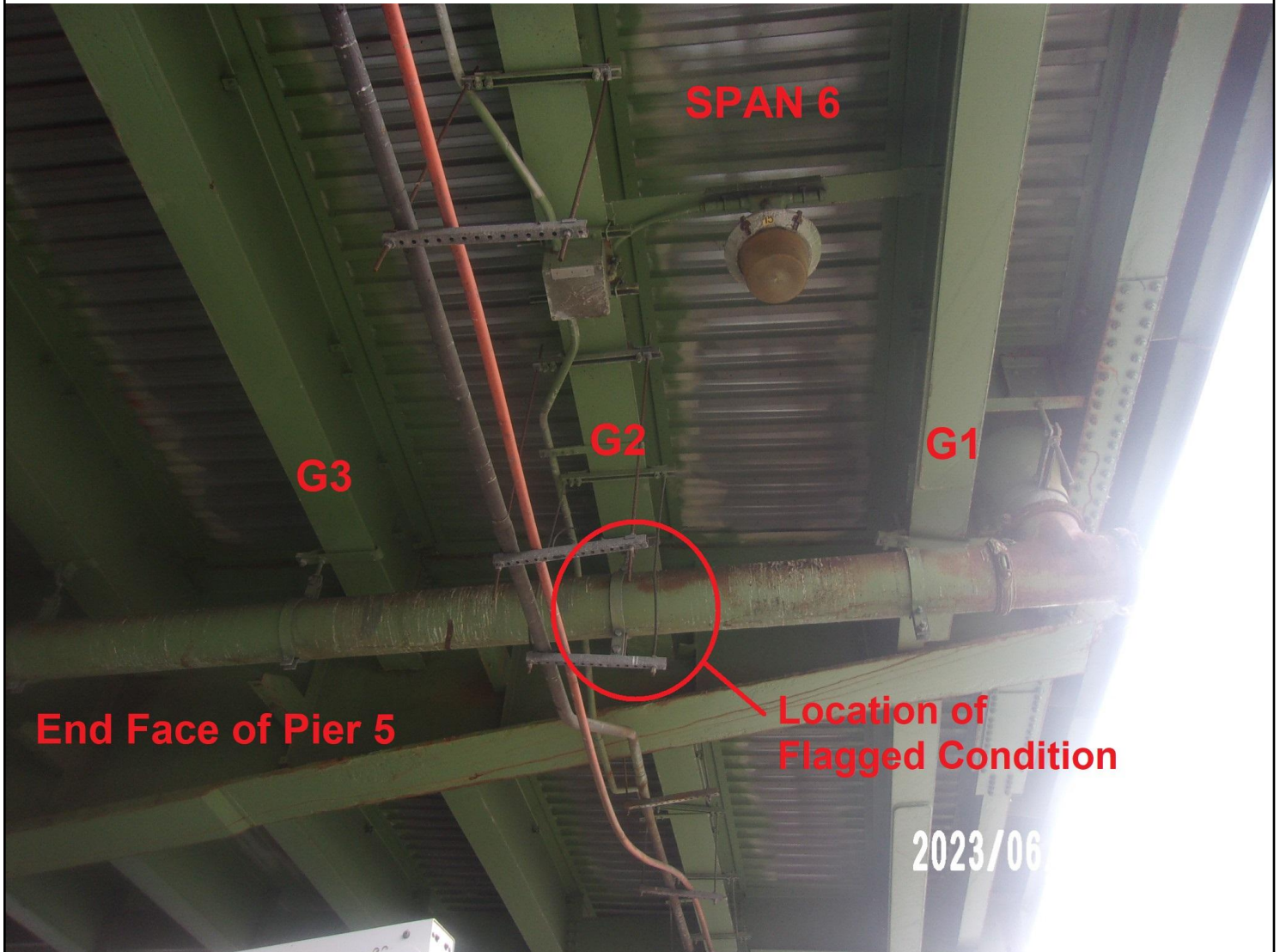
Yellow Flag NB2358W021

BIN 1065318

Flag Date: June 15, 2023

Photo Number: 3

Photo Filename: 23\_113\_7675.JPG



**Attachment Description:** General view of the flagged condition at Girder G2 in Span 6 at Pier 5. Looking Begin.



# DRAFT

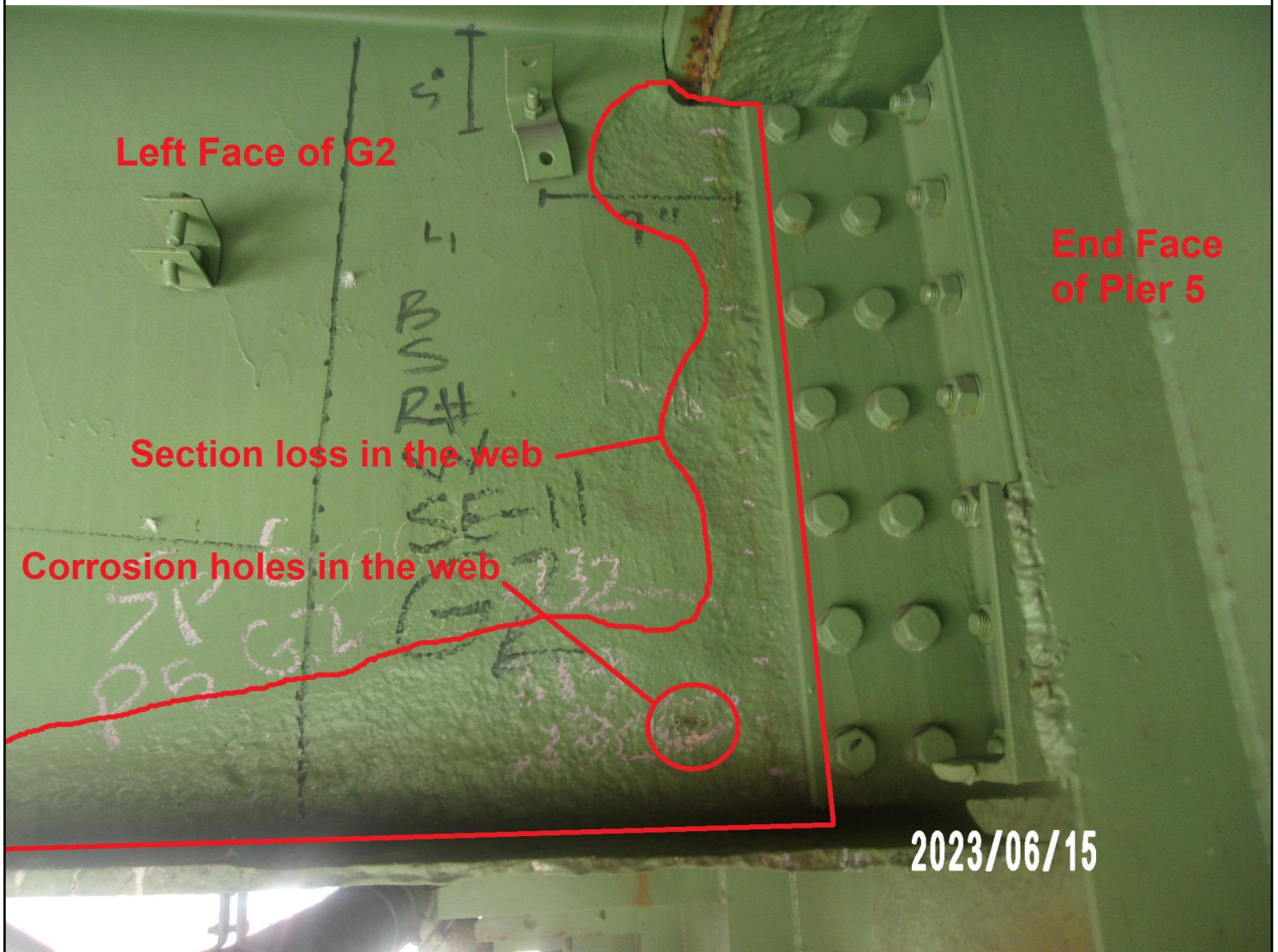
Yellow Flag NB2358W021

BIN 1065318

Flag Date: June 15, 2023

Photo Number: 4

Photo Filename: 23\_113\_7669.JPG



**Attachment Description:** The left face of Girder G2 in Span 6 at Pier 5. The full web height along the connection angle exhibits 25% to 70% section loss with average 48% section loss. The lower web above the bottom flange exhibits 45%-70% section loss with average 58% section loss. The lower web exhibits three corrosion holes over 1-1/2" x 1/2" area. The overall shear web area section loss is 51%. Looking Right.

# DRAFT

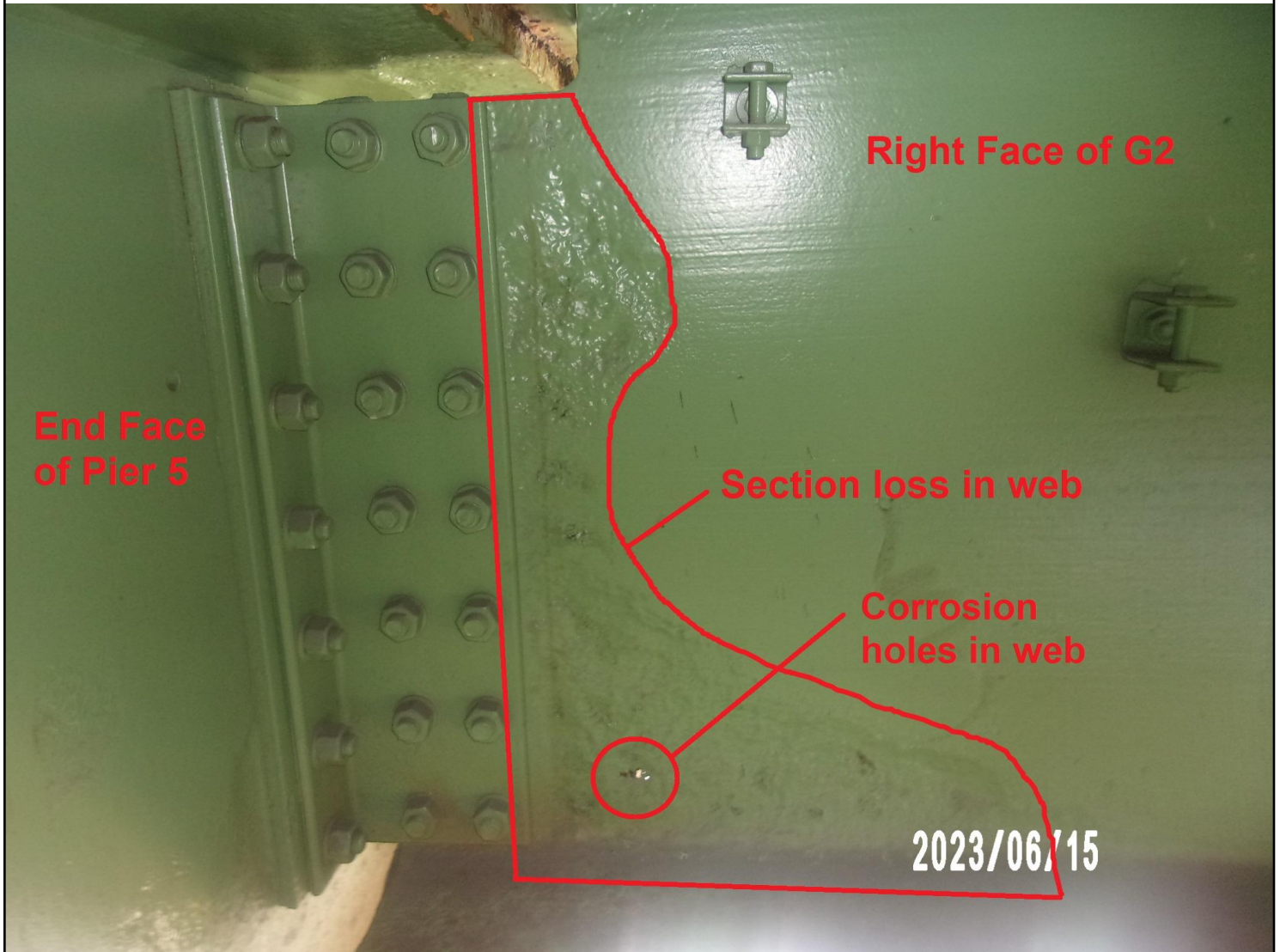
Yellow Flag NB2358W021

BIN 1065318

Flag Date: June 15, 2023

Photo Number: 5

Photo Filename: 23\_113\_7663.JPG



**Attachment Description:** The right face of Girder G2 in Span 6 at Pier 5. The full web height along the connection angle exhibits 25% to 70% section loss with average 48% section loss. The lower web above the bottom flange exhibits 45%-70% section loss with average 58% section loss. The lower web exhibits three corrosion holes over 1-1/2" x 1/2" area. The overall shear web area section loss is 51%. Looking Left.



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Flag Date: June 15, 2023

Photo Number: 6

Photo Filename: 23\_113\_7664.JPG



**Attachment Description:** The right face of Girder G2 in Span 6 at Pier 5. Close up view of the three corrosion holes over 1-1/2" x 1/2" area in the lower web. Looking Left.



# DRAFT

Yellow Flag NB2358W021

BIN 1065318

Flag Date: June 15, 2023

Photo Number: 7

Photo Filename: 23\_113\_7668.JPG



**Attachment Description:** The underside of Girder G2 in Span 6 at Pier 5. The bottom flange exhibits up to 50% section loss for the full width of the flange. Looking Begin and Left.